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SERIAL GALECTIN-3 AND FUTURE CARDIOVASCULAR DISEASE IN THE GENERAL POPULATION: DATA OF PREVEND

Poster Contributions
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Background: Lifetime risk for cardiovascular (CV) disease is high but predicting incident events on an individual level remains difficult. Single measurements of galectin-3, a marker of tissue fibrosis, predict mortality and new-onset heart failure (HF). Persistently elevated levels may indicate a clinically silent disease process. Our aim was to establish the value of serial galectin-3 measurements to predict CV outcomes in the general population.

Methods: Plasma galectin-3 was measured in the PREVEND study at baseline and after ~4 years. Changes in serial galectin-3 were expressed as categorical changes or absolute change from baseline and were related to subsequent outcome.

Results: Serial galectin-3 was measured in 5,958 subjects (mean age 49±12 years; 49% female). The median duration of follow-up was 8.3 years. Persistently elevated galectin-3 (defined as highest quartile at baseline and highest quartile during visit 2, n = 757 subjects) was associated with a higher risk for new-onset HF (HR 4.10[2.64-6.34];P<0.001), CV mortality (hazard ratio (HR) 5.66[3.07-10.43];P<0.001), all-cause mortality (HR: 2.62[1.87-3.67];P<0.001), new-onset atrial fibrillation (HR 1.87[1.20-2.93];P=0.006) and CV events (2.15[1.61-2.86];P<0.001), compared to subjects with non-persistently elevated galectin-3. After multivariable adjustments for baseline characteristics, serial galectin-3 remained an independent predictor of new-onset HF (HR 1.85[1.10-3.13];P=0.02) but not for other outcomes. Serial measurements provided more accurate prognostic value to predict new-onset HF, compared to a single baseline measurement (Harrell's C: 0.72[0.68-0.75] versus 0.68[0.65-0.72]; P=0.002, respectively).

Conclusions: Persistently elevated galectin-3 predicts new-onset HF after adjustment for covariates, and may help to identify individuals who are at risk for incident HF and might provide a measure to monitor interventions. Furthermore, our results indicate that serial galectin-3 measurements provide more accurate prognostic information compared to single determination of galectin-3.